UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,720	02/04/2004	Fritz Leber	ZAHFRI P602US	4126

20210 7590 12/21/2005

DAVIS & BUJOLD, P.L.L.C.
FOURTH FLOOR
500 N. COMMERCIAL STREET
MANCHESTER, NH 03101-1151

EXAMINER	
BONCK, RODNEY H	
ART UNIT	**PAPER NUMBER**
3681	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,720	LEBER, FRITZ	
	Examiner	Art Unit	
	Rodney H. Bonck	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,12 and 14-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,12 and 14-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following action is in response to the amendment received November 14, 2005.

Drawings

The replacement sheet of drawings was received on November 14, 2005. The replacement sheet has been approved for entry and overcomes the objection set forth in the previous Office action. Accordingly, the objection is withdrawn.

Claim Rejections - 35 USC § 112

The amendments to the claims overcome the rejection of claims 11, 12, and 14-30 under 35 USC 112, second paragraph. Therefore, the rejection is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11, 12, 15-17, 20, 21, 22, 24-26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al.(H964) in view of Hayakawa et al.('269). The Olson et al. device discloses a hydrodynamic torque converter including a clutch (50 or 108) arranged ahead of pump impeller 30 and connected to drive mechanism 12. The converter further includes a turbine rotor 88 and speed detectors 132 and 176 providing turbine and impeller speed signals to an electronic control unit 168 for transmission control. Olson et al. do not disclose whether a performance matrix containing hydrodynamic torque converter values is used in controlling the transmission. The Hayakawa et al. device discloses a transmission control wherein turbine torque is determined using pump and turbine speed and torque converter characteristics stored in the control unit (see column 9, lines 18-32). It would have been obvious to carry this teaching to the Olson et al. device, the motivation being to provide improved transmission control. Note that the clutches in Olson et al. are friction multi-plate clutches and thus inherently can be operated with clutch slippage, and the clutches are arranged inside one of the converter housing 24 or a transmission housing 22. In Olson et al. radially on the inside of impeller wheel 30 is a flange 35 which includes means 134 at one axial end of an extension of the flange enabling the speed of rotation to be detected. The means 134 can be considered cams insofar as defined in the claims. Means 134 can be considered parallel of the axis of rotation, as can the means 104.

Claims 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al.(H964) in view of Hayakawa et al.('269) as applied to claims 11, 12, 15-

17, 20, 21, 22, 24-26, 29 and 30 above, and further in view of Mamo('197). The second speed sensor 132 in Olson et al. is arranged in a positionally fixed component 74 that supports stator 60. In Olson et al., however, the stator does not appear to be supported for relative rotation on component 74 as called for here. In Mamo stator 53 is supported for relative rotation via sprag clutch 59 on fixed component 60. It is well known to support the stator for one-way rotation as in Mamo, and it would have been obvious to so support the stator in Olson et al., the motivation being to permit the stator to freewheel in one direction.

Claims 15-17, 24-26, and 30 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al.(H964) in view of Hayakawa et al.('269) as applied to claims 11, 12, 20, 21, 22, and 29 above, and further in view of Richmond('775). Even if the means 134 of the second speed sensor in Olson et al. were considered to be a radially disposed sensor rather than on an "axial end", both alternative arrangement are known in the art, and it would have been within the purview of the artisan to choose the arrangement best suited to the available space. Richmond shows both the radial and axial alternatives in Figs. 2 and 3. Thus it would have been obvious to choose either an axial sensor, as at 22,32 of Richmond, or a radial sensor, as at 110,112 of Richmond, for sensing turbine and impeller speeds in Olson et al.

Claims 18, 19, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson et al.(H964) in view of Hayakawa et al.('269) as applied to

claims 11, 12, 15-17, 20, 21, 22, 24-26, 29 and 30 above, and further in view of Shirai et al.('168). In Olson et al. the second speed sensor is not arranged at right angles to the rotational axis and the sensor is not outside the converter housing, as called for in these claims. Shirai et al. disclose a transmission including a torque converter wherein impeller speed is detected by a sensor arrangement 71,72 disposed at right angles to the rotational axis and outside the converter housing. It would have been obvious to use this arrangement in the Olson et al. device, the motivation being to provide a speed sensor that is easily accessible.

Response to Arguments

Applicant's arguments filed November 14, 2005 have been fully considered but they are not persuasive. Applicant argues that Olson et al. discloses a specific speed sensor and "fails to impart any suggestion or motivation to look to any reference...as to any alternative method, structure or apparatus for determining the speed of the impeller." Under 35 USC 103, however, the question is what "would have been obvious at the time the invention was made", meaning at the time the claimed invention was made. Thus what would have been obvious to Olson et al. at the time the Olson et al. invention was made is immaterial.

Applicant points out that Hayakawa et al. "merely infers the speed of the pump impeller". This is true because in Hayakawa et al. the engine speed will be the same as the pump speed. Thus sensing engine speed infers a pump speed. Olson et al. include an input clutch and teach measuring the pump speed directly, since the clutch could slip

in which case the pump speed would not necessarily be the same as engine speed. Hayakawa et al. teach measuring engine speed and turbine speed and then, using characteristic torque converter values stored in a storage section (a performance matrix), the turbine torque is determined. Obviously, in the Olson et al. type configuration, the *pump speed* would obviously be measured directly, since engine speed might not be an accurate measure of pump speed. Therefore, it would have been obvious to use pump speed and turbine speed readings in combination with the stored torque converter characteristics to determine the turbine torque.

Applicant points out that the stator in the Mamo device "is only capable of rotation in a forward direction and is held stationary during any reverse motion, therefore, not capable of complete rotation." The claims, however, merely call for a fixed component that "supports a relative rotational connection with the stator". This does not preclude permitting one-way rotation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kamada et al.('550) is cited for its teaching of determining turbine torque using engine speed (pump speed) and turbine speed in conjunction with stored torque converter characteristic data.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney H. Bonck whose telephone number is (571) 272-7089. The examiner can normally be reached on Monday-Friday 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

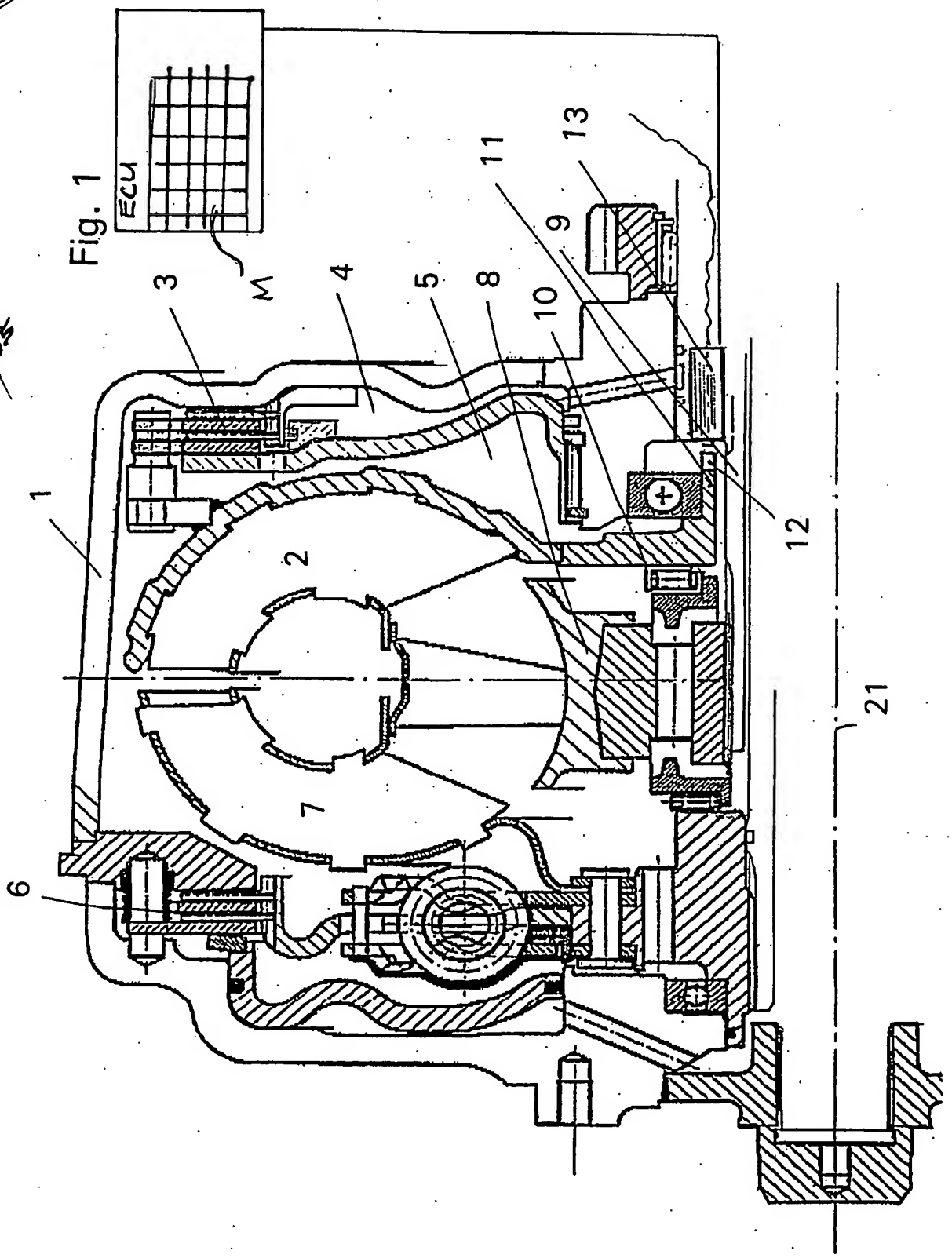
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rodney H. Bonck
Primary Examiner
Art Unit 3681

rhb
December 16, 2005

Annotated Marked-Up Drawing

Fig. 1



Approved
RKB
12/6/05

Approved
PAB
12/16/05

Fig. 1